DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 70.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-004612
Date Inspected: 13-Nov-2008

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Japan Steel Works

OSM Arrival Time: 830
OSM Departure Time: 1700
Location: Muroran, Japan

CWI Name: Chung-Fu Kuan

Inspected CWI report:	☑ Yes	☐ No	☐ N/A	**CWI Present:**	☑ Yes ☐ No
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Rod Oven in Use:**	☑ Yes ☐ No ☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes ☐ No ☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes ☐ No ☐ N/A
				Approved WPS:	☑ Yes ☐ No ☐ N/A
				Delayed / Cancelled:	☐ Yes ☑ No ☐ N/A

Bridge No: 34-0006
Component: Tower, Jacking and Deviation Saddles

Summary of Items Observed:

The following report is based on METS observations at Japan Steel Works (JSW) in Muroran Japan. Current work: Casting, machining and nondestructive testing of Saddles.

Fabrication Shop 4

T1-1 Base
No work performed on this date.

T1-2 Base
The QA inspector observed the in process welding of the structural steel plates for the Tower Saddle Base T1-2. The JSW welding personnel Mutuo Kashiwada, ID 08-2008 continued the fill welding of joint 8Y-7V (2-3) in the flat position. Takao Kawakami, ID 08-5079 continued the fill welding of joint 8Y-6V (2-2) in the flat position. The welding was performed utilizing the gas shielded flux cored arc welding process per the welding procedure specification (WPS) SJ-3012-3. The welding parameters and heat control were monitored by Intertek Testing Services Quality Control (QC) inspector Mr. Chung-Fu Kuan at periodic intervals. The minimum preheat temperature of 160°Celsius and maximum interpass temperature of 260° Celsius were verified to meet the WPS requirements by Mr. Kuan and the QA inspector utilizing Tempilstik temperature indicators. This data was entered into the QC inspector's daily log, identifying the location on a weld map.

T1-3 Base
The QA inspector observed the in process assembly layout and fit-up operation of the structural steel plates for the

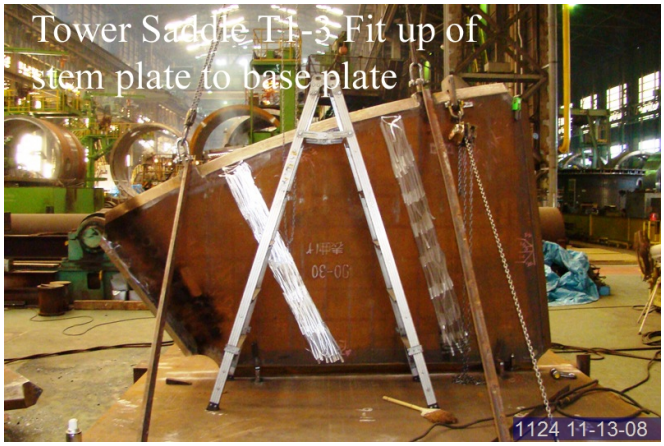
Tower Saddle Base T1-3. The stem plates were aligned on the base plate. The JSW fitter personnel Kiyotaka Koanagi performed the layout in accordance with approved drawings.

W2-E1

The QA inspector periodically observed The Nikko Inspection Services QC/NDT technician Mr. Kazuya Kobayashi perform magnetic particle (MT) testing of West Deviation Saddle Base W2-E1 casting to fabricated base welds. The MT was performed in accordance with ASTM standard E709 and Nikko Inspection Services procedure SF-MT-01 using the yoke method with dry visible powder. The testing was evaluated in accordance with the contract special provisions. 1 relevant indication was marked by Mr. Kobayashi. The indication was found at the toe of the rib to saddle partial joint penetration weld 1-15 on the casting side. The indication was excavated and reexamined by MT. The excavation was found to be acceptable. The excavation size was 120mm long by 20mm wide by 5mm deep. The testing was not completed on this date and the work appears to meet the minimum requirements of the contract specifications.

The QA inspector performed magnetic particle testing (MT) verification of West Deviation Saddle Base W2E1, at stem plate 1-2 to casting partial joint penetration weld and rib 1-6 to casting partial penetration weld after the MT was performed by Nikko Inspection Services QC/NDT technician Mr. Kazuya Kobayashi. The welds were examined using magnetic particle testing of approximately 10% of the locations examined by Mr. Kobayashi. The QA inspector performed the magnetic particle testing in accordance with ASTM E709 and JSW procedure SF-MT-01 using a magnetic particle AC yoke. No relevant indications were identified. The QA inspector did concur with the QC/NDT inspector's assessment. Please see the Magnetic Particle Testing Report (TL-6028) that was generated on this date for details of welds that were tested in accordance with the contract requirements.

The following digital photographs illustrate observations of the activities being performed.



Summary of Conversations:

JSW Assistant Manager Hiroshi Iga reported that he was informing the QA inspector that JSW was going to make some minor repairs to the base plate of West Deviation Saddle W2E1 at two locations where the edge of the plate was damaged during handling. The two dents had a maximum depth of 4mm. The QA inspector asked if JSW wanted to just fair the dents into the surrounding material as allowed by AWS D1.5. Mr. Sato responded that fairing was an option but JSW felt that this would leave an unsightly finish to the assembly and welding and grinding the dents was the best solution. The QA inspector informed Mr. Sato that base metal repairs required approval of the engineer. Mr. Sato asked if the QA inspector could expedite the approval of the repair to avoid

delay in getting the assembly to final post weld heat treatment. The QA inspector contacted the Structural Materials Representative, Venkatesh Iyer and notified him of the required base metal repair.

There were general conversations with Intertek Testing Services Certified Welding Inspector Mr. Chung-Fu Kuan relative to the location of the welding and inspection personnel in the fabrication shop number 4 and as noted above.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Venkatesh Iyer, (858) 967-6363, who represents the Office of Structural Materials for your project.

Inspected By:	Lanz,Joe	Quality Assurance Inspector
Reviewed By:	Brasel,Ron	QA Reviewer